

REMARKS

Claims 3, 6-8, 13, 15, 17-19, 22, 23, 27, 31, 32 and 35-37 are cancelled without prejudice. New claims 38-45 are added by this amendment.

The Examiner rejected claims 1-31, 33, 34, 36 and 37 under 35 U. S. C. § 112, second paragraph. The source of the Examiner's objection this time is that the claims were amended in response to the April 13, 2006 official action to recite that the first and second sources of ions were a first source of ions of a first type and a second source of ions of a second type. However, the application as filed discloses, *inter alia*, that

“Illustratively, one of the sources 28-1, 28-2, . . . 28-n, for example, an electrospray ionization source 28-1, is selected for its ability to provide speciation information, while another of the sources 28-1, 28-2, . . . 28-n, for example, an inductively coupled plasma source 28-n, is selected for its ability to provide very sensitive elemental determination,”

WO 03/058204, page 7, lines 20-24, and

“The illustrated embodiment employs two different ionization methods and apparatuses, an electrospray ionization (hereinafter sometimes ESI) method and apparatus 28-1, and an inductively coupled plasma (hereinafter sometimes ICP) method and apparatus 28-n.

* * *

[T]hese methods and apparatuses 28-1, 28-n are complementary, both in the types of information that they provide and in their solution uptake requirements. For example, when a high-performance liquid chromatography 20 (hereinafter sometimes HPLC) separation is employed, of a total effluent flow of, for example, 1 mL/min., approximately 100 μ L/min. can be supplied to ESI apparatus 28-1, with the remainder being supplied to ICP apparatus 28-n,”

WO 03/058204, page 8, lines 11-30, and

“As previously noted, the illustrated embodiment employs ESI and ICP as ionization sources 28-1, 28-n, respectively. These are attractive methods and apparatus because of their complementary nature. The ESI method and apparatus 28-1 produce multiply-charged molecular ions and molecular fragment ions 32-1. This permits chemical structure information to be obtained. The ICP method and apparatus 28-n produce principally atomic ions 32-n. This permits elemental and isotopic information to be obtained for most elements, and with considerable sensitivity,”

WO 03/058204, page 9, lines 12-19, and

“This TOFMS 30 geometry is less costly to construct and

maintain. For example, several components and systems, such as vacuum pumps, power supplies, and portions of the data acquisition systems, are redundant and can be integrated to achieve cost savings. For example, the interface regions normally employed with ESI sources 28-1 and ICP sources 28-n generally have similar vacuum requirements. The TOFMS 30 geometry permits a single vacuum pump to be employed to evacuate the first stages of both vacuum interfaces, and the second and third stages of vacuum of each the ESI source 28-1 and the ICP source 28-n can be served by a single high-vacuum pump, for example, a turbomolecular pump,”

WO 03/058204, page 10, line 26-page 11, line 2, and

“The orthogonal extraction region 35 geometry of the TOFMS 30 permits analysis of ions 32-1, 32-2, ...32-n produced by multiple ionization sources 28-1, 28-2, 28-n simultaneously or in rapid sequence. Referring to Fig. 1, the sources 28-1, 28-n are oriented 180° from each other, and ions are extracted continuously in opposite directions. Each source has a distinct, differentially pumped vacuum interface in order to transfer ions from their current pressure, for example, atmospheric pressure, into a vacuum environment. Because each interface is distinct, it can be tailored to the ion flux and energy produced by the respective source 28-1, 28-n. The ion beams obtained from the sources 28-1, 28-n are then collimated and introduced into the same extraction region 35, where they are extracted for mass analysis. Because the ionization sources 28-1, 28-n are oriented in different directions, they attain different trajectories 40-1. 40-n within the drift region of the TOFMS 30 and, consequently, can be detected separately at different ion detectors 34-1, 34-n,”

WO 03/058204, page 11, lines 12-25. There are more instances supporting Applicants’ position on this issue, but the correctness of Applicants’ position on this issue is beyond dispute. At least as of the time PCT/US03/00072 was filed, Applicants were in possession of the invention of different types of ion sources. The 35 U. S. C. § 112, second paragraph rejection based upon ignoring the amendment of the claims in the October 4, 2006 response to recite different types of ion sources is clear error and is overcome.

The Examiner rejected claims 2 and 16 under 35 U. S. C. § 102. The Examiner relied upon Naito U. S. Patent 3,886,357 (hereinafter Naito) to support this rejection. As previously noted, claims 2 and 16 have been amended to recite “apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different types of ion sources” (claim 2), and “at least two different types of ion sources, and coupling ion streams simultaneously from the at least two different types of ion sources to the spectrometer” (claim 16). Naito discloses ion sources 1 and 2. Naito nowhere suggests

that his ion sources 1 and 2 are different types of ion sources. Accordingly, the 35 U. S. C. § 102 rejection of claims 2 and 16 is overcome. Claims 2 and 16 are entitled to further favorable consideration, at least on this basis.

The Examiner rejected claims 1, 2, 6, 14, 16, 20, 28, 30, 31, 33 and 36 under 35 U. S. C. § 102. Claims 6, 31 and 36 have been cancelled without prejudice. Thus, as to these claims, the rejection is moot. The Examiner relied upon Farnsworth U. S. Patent 6,777,670 (hereinafter Farnsworth) to support this rejection. As previously noted, claims 1, 2, 16 and 30, from which the remaining claims depend, either directly or indirectly, have been amended to recite “a first ionization source of a first type for creating ions [and] a second ionization source of a second type different from the first type for creating ions” (claim 1), “apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different types of ion sources” (claim 2), “at least two different types of ion sources, and coupling ion streams simultaneously from the at least two different types of ion sources to the spectrometer” (claim 16), and “providing at least two different types of ion sources, first coupling an ion stream from a first one of said ion sources of a first type into the spectrometer, [and] next coupling an ion stream from a second one of said ion sources of a second type different from the first type into the spectrometer” (claim 30). Farnsworth discloses only electrospray ionization sources. Farnsworth nowhere suggests using different types of ion sources in his spectrometer. Accordingly, the 35 U. S. C. § 102 rejection of claims 1, 2, 16 and 30, and claims 14, 20, 28 and 33, which depend from respective ones of claims 2, 16 and 30, is overcome. Claims 1, 2, 14, 16, 20, 28, 30, and 33 are entitled to further favorable consideration, at least on this basis.

The Examiner rejected claims 3, 4, 15, 17, 18 and 29 under 35 U. S. C. § 103. Claims 3, 15, 17 and 18 have been cancelled without prejudice. Thus, with respect to these claims, the rejection is moot. The Examiner relied upon Farnsworth to support this rejection. As noted above, claims 2 and 16, from which respective ones of claims 4 and 29 depend, have been amended to recite “apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different types of ion sources” (claim 2), and “at least two different types of ion sources, and coupling ion streams simultaneously from the at least two different types of ion sources to the spectrometer” (claim 16). Farnsworth discloses only electrospray ionization sources. Farnsworth nowhere suggests using different types of ion sources in his spectrometer. Accordingly, the 35 U. S. C. § 103 rejection of claims 4 and 29 is overcome. Claims 4 and 29 are entitled to further favorable consideration, at least on this basis.

The Examiner rejected claims 5, 8-13, 19, 21-27, 34 and 37 under 35 U. S. C. § 103. Claims 8, 13, 19, 22, 23, 27 and 37 have been cancelled without prejudice. Thus, with respect to these claims, the rejection is moot. The Examiner relied upon the combination of Farnsworth and Whitehouse U. S. Patent 6,040,575 (hereinafter Whitehouse) to support this rejection. As noted above, claims 2, 16 and 30, from which respective ones of claims 5, 9-12, 21, 24-26 and 34 depend, have been amended to recite “apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different types of ion sources” (claim 2), “at least two different types of ion sources, and coupling ion streams simultaneously from the at least two different types of ion sources to the spectrometer” (claim 16), and “providing at least two different types of ion sources, first coupling an ion stream from a first one of said ion sources of a first type into the spectrometer, [and] next coupling an ion stream from a second one of said ion sources of a second type different from the first type into the spectrometer” (claim 30). Again, Farnsworth discloses only electrospray ionization sources. Farnsworth nowhere suggests using different types of ion sources in his spectrometer. Whitehouse discloses several types of ion sources, including electron ionization (EI), chemical ionization (CI), laser desorption (LD), matrix assisted laser desorption ionization (MALDI), photon and multiphoton ionization, thermospray (TS), electrospray (ES), atmospheric pressure chemical ionization (APCI), pyrolysis MS, inductively coupled plasma (ICP), fast atom bombardment (FAB), field desorption (FD), secondary ion mass spectrometry (SIMS) and glow discharge. However, Whitehouse neither discloses nor suggests “apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different types of ion sources” (claim 2), “at least two different types of ion sources, and coupling ion streams simultaneously from the at least two different types of ion sources to the spectrometer” (claim 16), and “providing at least two different types of ion sources, first coupling an ion stream from a first one of said ion sources of a first type into the spectrometer, [and] next coupling an ion stream from a second one of said ion sources of a second type different from the first type into the spectrometer” (claim 30). Accordingly, the 35 U. S. C. § 103 rejection of claims 5, 9-12, 21, 24-26 and 34 is overcome. Claims 5, 9-12, 21, 24-26 and 34 are entitled to further favorable consideration, at least on this basis. Claims 3, 6-8, 13, 15, 17-19, 22, 23, 27, 31-32 and 35-37 are cancelled without prejudice.

Claims 1, 2, 4, 5, 9-12, 14, 16, 20, 21, 24-26, 28-30, 33, 34 and 38-45 are thus entitled to further favorable consideration, culminating in allowance, for at least the reasons set forth above.

The Commissioner is hereby authorized to charge any fees that might be due to constitute this a timely response to the November 15, 2006 official action to our undersigned counsel's deposit account 10-0435, with reference to matter 29920-75460. A duplicate copy of this authorization is enclosed for that purpose.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Richard D. Conard", written in a cursive style.

Richard D. Conard
Attorney Reg. No. 27321
Attorney for Applicants

Indianapolis, Indiana
(317) 231-7285

INDS02 RDC 862780